



August 20, 2014

Mr. Dave O'Keefe
CTAP LLC.
2585 Trailridge Dr. East
Lafayette, CO 80025

Delivered via email dokeefe@ctapllc.com

RE: Work Plan for an Additional Phase II Investigation
2406 West Towne Street
Glendive, Montana
Tetra Tech Project No.: 114-551451.200

Dear Mr. O'Keefe:

Tetra Tech is pleased to submit this work plan to conduct a limited subsurface investigation at 2406 West Towne Street in Glendive, Montana (herein referred to as the "Property"; Figures 1 and 2). This document was prepared in response to our telephone conversation on July 31, 2014, and in accordance with our *Proposal to Prepare a Work Plan for an Additional Phase II Investigation* (Tetra Tech, 2014a). This work plan is designed to address the outstanding items detailed in an email to you from Mr. Duc Duong with Bank of the West on July 1, 2014. The requirements set forth in email are outlined below.

BACKGROUND INFORMATION

GRS | Corteq (GRS) recently conducted a Phase I Environmental Site Assessment (Phase I ESA) of the Property and identified Recognized Environmental Conditions (RECs) associated with the Property (GRS, 2014). The identified RECs included staining on the shop floor near trench drains, soil staining associated with two diesel above ground storage tanks (ASTs), and the presence of a petroleum terminal tank farm on the western adjoining property.

In May 2014, Tetra Tech conducted a limited subsurface Phase II investigation at the Property (Tetra Tech, 2014b). The scope of work included investigating the floor drain system and the staining identified near the ASTs. Results indicated that the floor drain system flows to two separate drain fields, one north of the shop and one east of the shop. Based on the data collected, the north drain field appears to contain petroleum hydrocarbon impacts to soil and groundwater. However, no exceedances of Montana Department of Environmental Quality (MDEQ) risk based screening levels (RBSLs) were detected in the samples collected from either drain field.

A soil boring was drilled directly down-gradient of the AST fueling area. The water sample collected from this boring had a petroleum hydrocarbon analyte, C₁₉ to C₃₆ aliphatics that did exceed the MDEQ RBSL in groundwater near the AST. Given the location of this

boring, the source of the contamination could be originating from the ASTs or from the north drain field

Tetra Tech recommended discontinuing all petroleum discharges to the drain fields. Additionally, we recommended further investigation of the groundwater RBSL exceedance detected just south of the ASTs. The following scope of work was derived to address these recommendations and the outstanding items detailed by Mr. Duong.

SCOPE OF WORK

The purpose scope of work for this Phase II subsurface investigation includes the following:

- Sample the soil and groundwater near the western property boundary to determine whether the adjoining property has impacted the Property.
- Investigation of the hydrocarbon release identified near the ASTs.
- Investigate available options to terminate connection between floor drains and drain fields. Include alternatives for collection and disposal of grey water.
- Prepare a report presenting the results of the sampling activities and the recommendations for modification of the floor drain systems.

Prior to any subsurface disturbance, a site-specific health and safety plan (HASp) will be prepared and the Montana One-Call underground utility location service will be contacted to locate underground public utilities at the site. However, locating the on-site private utilities will be the responsibility of the owner and Tetra Tech will not be responsible for damage potentially incurred during drilling activities.

Applicable Tetra Tech standard operating procedures will be followed for the proposed tasks which are detailed below.

Task 1: Western Boundary Investigation

To determine if there are petroleum hydrocarbon impacts along the western property boundary, we propose drilling three soil borings (one of which will be completed as a monitoring well) and collecting soil and groundwater samples for laboratory analyses. Soil samples will be collected during the drilling process and will be field screened for VOCs using a photoionization detector (PID). Following collection of the groundwater samples, the soil boring will be abandoned. The following is a brief summary of the activities which will be conducted as part of this investigation:

- One soil boring will be drilled (CTAP-MW4) in the hydrologically down-gradient direction from the petroleum terminal tank farm (Figure 2). Two soil borings (CTAP-B5 and CTAP-B6) will be placed along the portion of the western property boundary that abuts the tank farm. The borings will be advanced to the groundwater, assumed to be approximately 25 to 30 feet below ground surface (bgs), using direct-push drilling techniques.
- The lithology of the recovered soil will be described and the samples will be field screened for hydrocarbon impacts using observations of staining, odor, and measurements of volatile compounds in soil vapor using a PID and standard headspace screening techniques.

- As specified by Mr. Duong, two soil samples will be collected from each boring, one from the native soil just below any backfill material (shallow sample), and one from the groundwater/soil interface (deeper sample collected at approximately 25 feet bgs). The samples will be placed into laboratory provided containers and submitted to Energy Laboratories (Energy) in Billings, Montana for analysis of volatile petroleum hydrocarbons (VPH), extractable petroleum hydrocarbon (EPH)¹. If the reported EPH concentration exceeds 200 milligrams per kilogram (mg/kg) then the sample will be fractionated. For cost estimation purposes, it is assumed that fractionation will not be required.
- Monitoring well CTAP-MW4 will be completed using two-inch diameter Schedule 40 PVC 0.010-inch factory slotted screen placed from approximately 20 feet bgs to the base of the boring (30 feet bgs). A threaded cap will be placed on the bottom of the screen. A 10/20 size silica sand filter pack will be placed from the base of the boring to 10 feet bgs. Bentonite chips will be placed from 10 feet to three feet below grade. A steel vault will be placed at the ground surface to protect and seal the well surface.
- Depth to groundwater will be measured using an electric water level probe. The water level probe will be decontaminated between each measurement by washing with Liquinox[®] soap and rinsing with deionized water.
- One groundwater sample will be collected from each boring using a disposable polyethylene bailer. CTAP-MW4 will be purged of approximately three well casing volumes of water. Field parameters consisting of pH, temperature, specific conductance, dissolved oxygen (DO), and oxidation-reduction potential (ORP) will be monitored during purging. Purging will continue until these parameters have stabilized or three well volumes have been removed. Purged water will be discharged on the paved surfaces for evaporation.
- The groundwater samples will be placed in laboratory provided containers, transported in ice-filled coolers, and submitted to Energy for analysis of VPH and EPH. If the reported EPH concentration exceeds 1,000 micrograms per liter (µg/l) then the sample will be fractionated. For cost estimation purposes, it is assumed that samples will not require EPH fractionation.
- The soil borings will be abandoned following the sampling with drill cuttings and a bentonite plug at the groundwater interface and at two to four feet bgs.

Task 2: Investigate Hydrocarbon Impacts Near ASTs

On August 5, 2014 Tetra Tech reported the presence of hydrocarbon contaminated groundwater to the MDEQ. Ms. Katie Erny, Environmental Science Specialist with the MDEQ, responded on August 10, 2014 via email. In the email she stated that a 30-Day Release Letter will be sent to CTAP. The following work is proposed to investigate the extent and magnitude of hydrocarbon contamination near the ASTs. Should our scope of work differ with that required by the MDEQ, then this work plan will be amended.

- Install three soil air knife holes using a soil vacuum truck and air knife at locations of the proposed borings (Figure 2). The air knife holes will be advanced to a depth of approximately six feet bgs to ensure that the borehole is clear of underground utilities.

¹ Montana Department of Environmental Quality Technical Guidance Document #7 specifies VPH/EPH analytical methodology for petroleum contaminated soil and groundwater (MDEQ, 2009).

- Three groundwater monitoring wells will be drilled to approximately 30 feet bgs (Figure 2) using direct push drilling techniques. Soil samples will be field screened and sampled as described above. The monitoring wells will be completed similarly to CTAP-MW4.
- Up to two soil samples will be collected from each borehole for laboratory analyses. If no impacts (based on field screening) are encountered in the soil column, then one soil sample will be collected from the groundwater interface. If impacts are detected, then one sample will be collected from the depth interval that indicates the greatest impacts and one from the base of impacts. If impacts reach to the groundwater, then a sample will be collected from the most impacted material and from the groundwater interface. All samples will be submitted to Energy for analysis of VPH and EPH as described above.
- A groundwater sample will also be collected from each well and analyzed as described above. For cost estimation purposes, it is assumed that EPH fractionation will only be required in two samples.
- Each well will be surveyed to the nearest 0.01 feet relative to sea level. Horizontal location for each new well and boring will also be established using the CTAP shop building as the reference.

Task 3: Floor Drain Modification

Currently two floor drain systems drain to two separate drain fields. Sample results from borings drilled for our previous investigation indicate there are minimal hydrocarbon impacts and no exceedances of MDEQ RBSLs adjacent to the drain fields (Tetra Tech, 2014b). We understand that CTAP still has use for the floor drains and if possible would like to modify the piping to drain into holding tanks and thus discontinue use of the drain fields. Tetra Tech will evaluate and present options for collection and disposal of grey water.

Task 4: Reporting

Two separate reports will be prepared; one report will specifically be prepared for submittal to the MDEQ and will present finding from Task 2 (this report will also be shared with Bank of the West), the other report will address Tasks 1 and 3 to satisfy the remaining items detailed by Mr. Duong.

Following receipt of the laboratory results, the reports will be prepared presenting the field and analytical results of this investigation. Laboratory analytical results will be compared to MDEQ standards. Conclusions and recommendations detailing any additional investigative work needed, or additional corrective action alternatives for the site will be included in the report. State law requires that Tetra Tech report any exceedances of RBSLs (MDEQ, 2009) to the MDEQ. The Task 1 investigation is designed to determine the presence of environmental contamination. Therefore, if contamination is discovered, it is beyond the scope of this investigation to determine estimated remedial costs and timing for MDEQ site closure. The findings from Task 3, along with a cost estimate, will be included in the second report

COST ESTIMATE AND SCHEDULE

Tetra Tech is prepared to initiate preparations for this work immediately following your written acceptance. Final schedule will be determined by the drilling rig availability; currently

the driller is booking approximately two to three weeks in advance. Upon receipt of the laboratory analyses we will call within 24 hours to report the results of these analyses. The reports of our findings will be prepared and submitted within three weeks of receiving the laboratory results.

Costs for these services will be billed according to an actual time and materials cost basis (Attachment A). Tetra Tech will not exceed the costs authorized in this work plan without prior approval from CTAP LLC. Enclosed, please find our *Consulting Services Agreement* (Attachment B). Should you find this proposal acceptable, please sign the agreement, retain a copy for your files, and return the original to our office.

Please call if you have questions regarding this work plan or any aspect of the project. We appreciate the opportunity to serve your environmental consulting needs. If you have any questions, please contact me at (406) 248-9161.

Sincerely,

Tetra Tech, Inc.



Jeff Rice
Environmental Group Manager



Pam Reed
Environmental Scientist

JRR/PR/ba

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Enclosure:

Figures

Attachment A: Cost Estimate

Attachment B: Consulting Services Agreement

Attachment C: Statement of Qualifications

REFERENCES

GRS Group I CORTEQ (GRS), 2014. Phase I Environmental Site Assessment, Property Reference: 2406 W. Towne St., Glendive, MT 59330. March 27.

Montana Department of Environmental Quality, 2009. *Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases*, September.

Tetra Tech, 2014a. *Proposal to Prepare a Work Plan for an Additional Phase II Investigation 2406 West Towne Street Glendive, Montana*, July 29.

Tetra Tech, 2014b. *Limited Subsurface Phase II Investigation 2406 West Towne Street Glendive, Montana*, June 11.



FIGURES



ATTACHMENT A
COST ESTIMATE



ATTACHMENT B

CONSULTING SERVICES AGREEMENT



ATTACHMENT C
STATEMENT OF QUALIFICATIONS